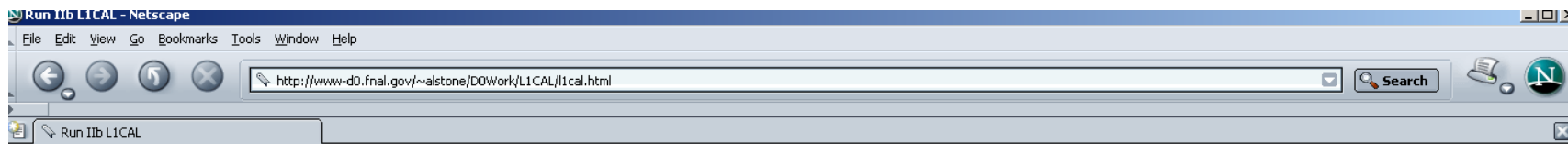




My L1 CAL Web Page



Run IIb L1CAL

Questions, comments and requests should be sent to the [Alan L. Stone](#)
Last modified: Mon Aug 30 13:26:03 CDT 2004

BLS-ADF Transition System

Racks, Crates & Cables

L2

Photos

Archives

[Alan Stone
UIC](#)

[Dan
Edmunds
MSU](#)

[Hal Evans
Columbia](#)

[Fermilab
PPD/EED](#)

[Run IIb
Trigger
Upgrade](#)

[Agenda
Server](#)

[List Server](#)

[Runs &
Stores](#)

[Run II
Luminosity](#)

BLS-ADF Transition System

- 2004-08-23: The requisition was approved to get an outside contractor (George Wolf) will finish the layout of the patch panel card and the paddle card. We were losing manpower because of the current shutdown, so relying on D0 technicians would have delayed the schedule. The revised artwork should come back by Aug 31.
- 2004-08-16: [Power output](#) from the ADF and VME Control crates provided by Dan Edmunds.
- 2004-08-12: Nine pleated foil cables have arrived and passed Johnny Green's inspection. They are about 9.5 feet instead of 10 as they were shortened to reconnectorize.
- 2004-08-06: Email discussion on [rack power needs](#) for the new L1 CAL trigger.
- 2004-08-05: [Answers on grouding issues](#) for the patch panel and paddle card from Dan Edmunds.
 - 2004-08-10: [Response from John Anderson](#).
 - 2004-08-10: Speaking with Dan on the phone - the 10k ohm resistor for the monitoring effectively removes all signal components faster than 1 micro-second. Dan proposes using a 500 ohm resistor instead.
- 2004-08-04: Discussions between Alan Stone, Mario Camuyrano and John Fogelsong to clarify the relationship between the channel spreadsheet and the engineering schematics. Mario has agreed to revise his Excel spreadsheet to include the following for each of the 1280 BLS trigger cable inputs:
 - New MCH1 Rack (103-112)
 - Patch panel bulkhead (1-40)
 - Patch panel card (1-80 or 1A,1B...40A,40B)
 - Patch panel input (?? per patch panel bulkhead)

Engineering Schematics

- [Patch Panel](#) - Bulkhead for BLS input, pleated foil output (to paddle board) and test points.
- [Block Wiring](#) - All signal and ground lines for 16 trigger towers from BLS cable to patch panel to pleated foil to paddle card to ERNI connector to ADF backplane.
- [Paddle Card](#) - Input from two pleated foil connectors, and output to ADF backplane via ERNI connector.
- [MCH1 Rack Layout](#) - Distribution of patch panels and crates for the new trigger

I am
about 1
week
behind
with
updates

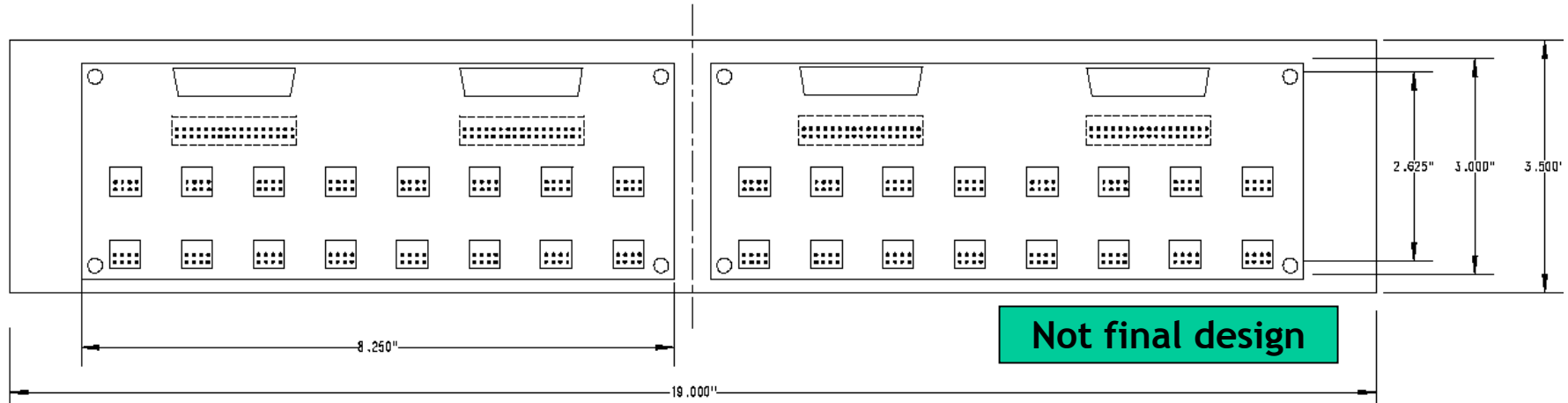


BLS-to-ADF Transition System

- Layouts of patch panel and paddle cards were completed a week ago
 - Dan Edmunds, Johnny Green & John Fogelsong all signed off after a few minor changes
 - Pass signal from existing 1280 BLS trigger cables to new ADF crate backplanes
 - Fully documented in pending D0 Note
 - Need careful mapping of each conductor - signal and ground
 - Mario has a massive spreadsheet
 - New rack layout for MCH1
 - Cooling is still a concern. Existing cables major constraint.
 - Require rigorous testing of all new passive electronics and cables
 - Prototype cables are here. Patch panel and paddle cards are in the last stage of layout. Should have stuffed boards in <10 days.
 - Mock-up of patch panels and cables to understand cable flow and strain relief, cable lengths, etc.
 - Already have new racks, patch panel templates, scrap cables
 - Relabel existing BLS cables - new destination
 - Provide outside company with format and text



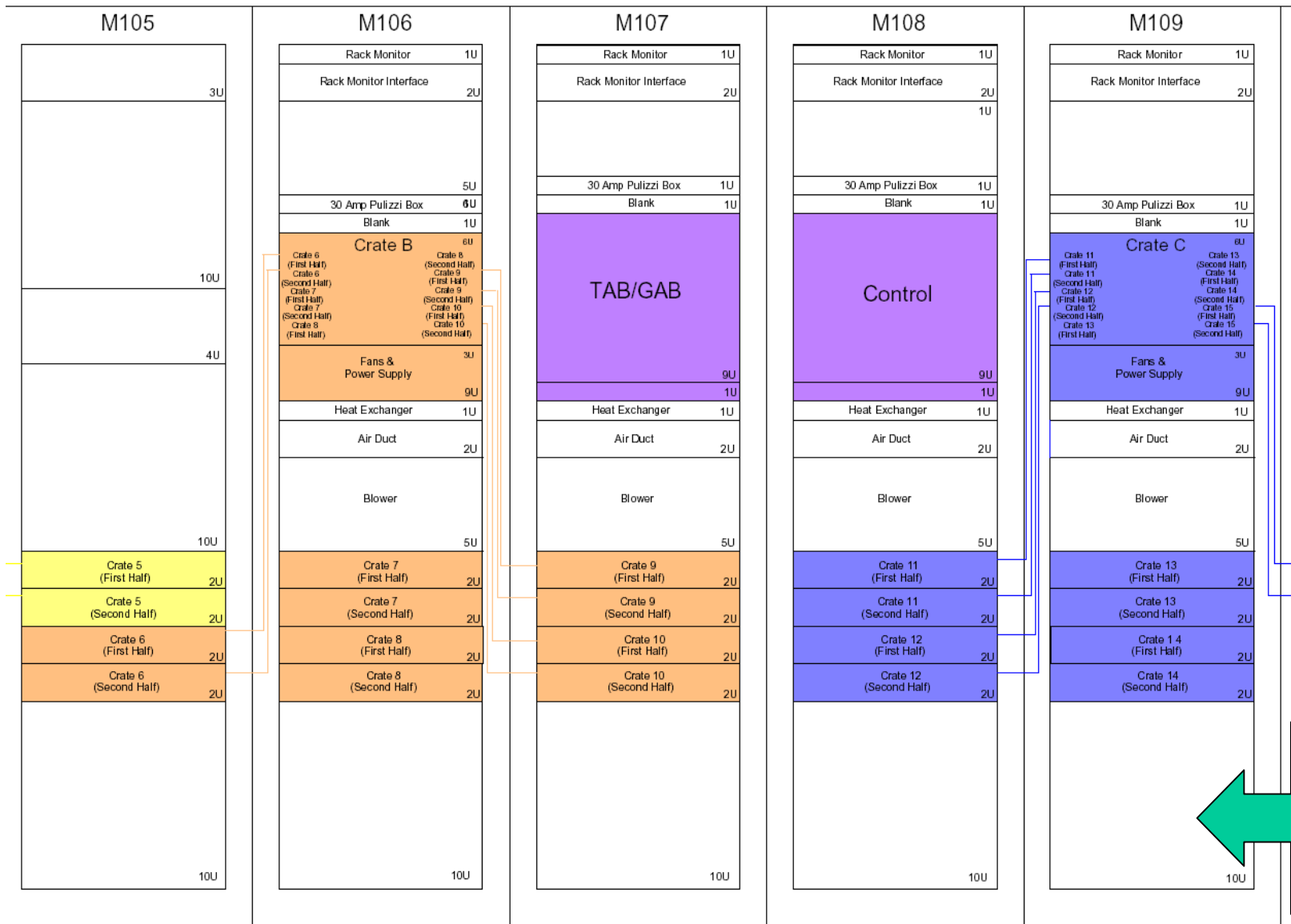
Patch Panel



- **Need 40 Patch Panels (PP) - four in each rack.**
 - We are considering mounting the PP to a drawer.
 - Two patch panel cards (PPC) - stuffed printed circuit boards - for each PP. The cables plug into the connectors from inside.
 - 16 BLS input cables - for each trigger tower (TT) - and 2 pleated foil output cables for each ADF.
 - 4 monitor connectors accessible from outside. Expert can plug in a scope (even during physics data taking!) to monitor or debug a problem or feature.

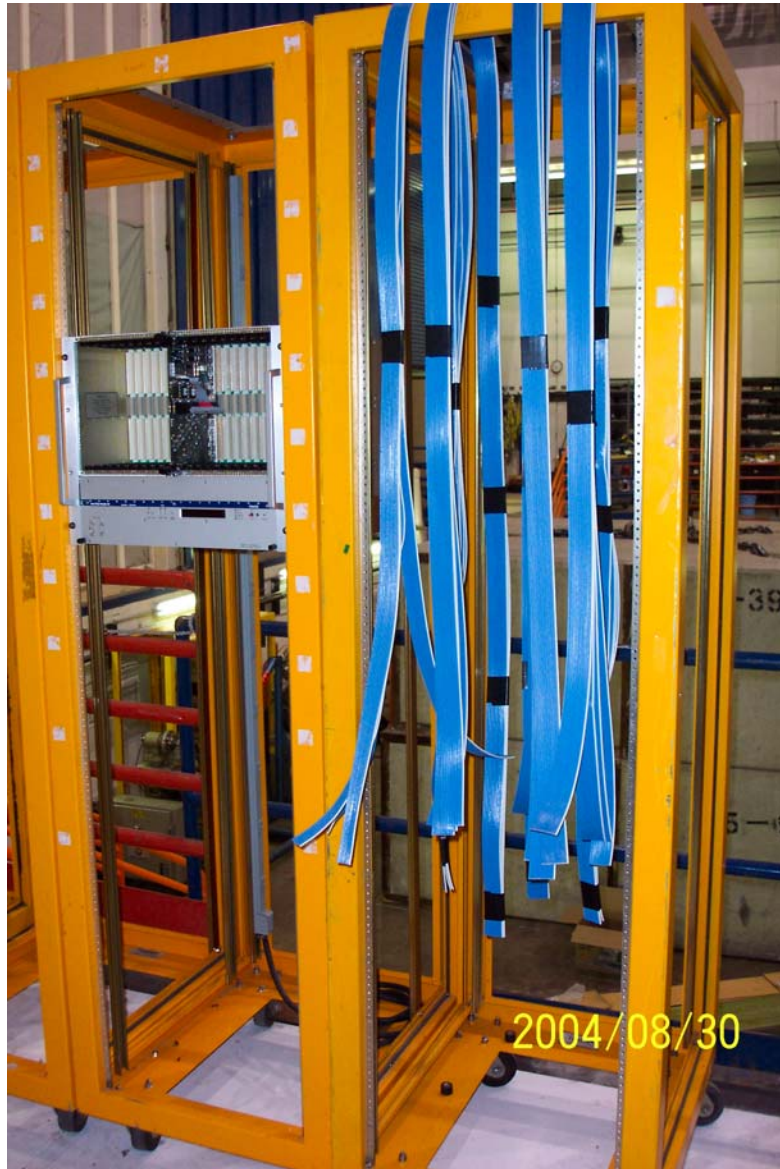


MCH1 Rack Layout





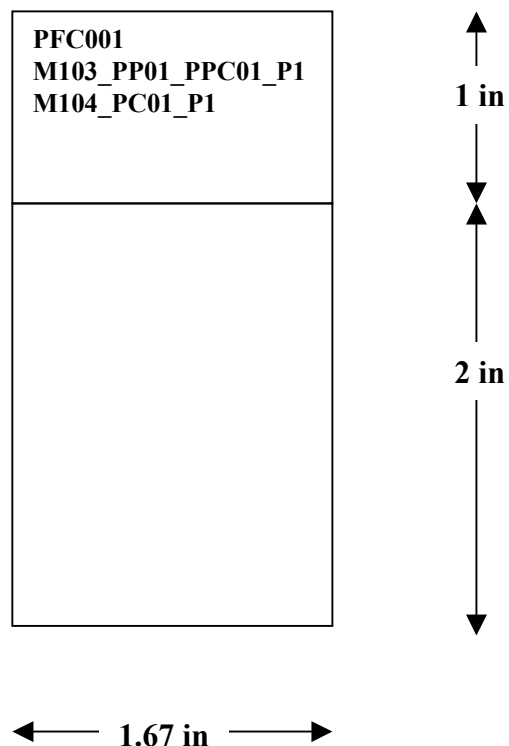
Test Stand



- Test stand area has wooden platform floor to prevent any ground faults
- Racks lowered from DAB3 last week
 - Have 5. Will need 10.
- 2 patch panels and template PCBs for 4 patch panel cards have been prepared
- Blue cable is exact type of existing BLS trigger cables
 - Cut 16 ten-foot lengths
- Preparing mock-up of cables and patch panels using rack layout specs
 - Need help!
- Need to prepare a setup to test passive electronics and cables
 - Have scope and pulse generator
 - Need help!



Labels



- Label name
- Origin
- Destination
- Pleated Foil (left): 160 x 2
 - One label for each end of 10 foot cables
 - PFC001 = Pleated Foil Cable 1 (of 160)
 - M103 = MCH Rack 103 (103-112)
 - PP01 = Patch Panel 1 (of 40)
 - PPC01 = Patch Panel Card 1 (of 2)
 - P1 = Connector 1 (of 2)
 - PC01 = Paddle Card 1 (of 80)
- BLS Trigger: 1280 x1
 - Cannot access platform end of detector
 - Will not remove or cover old labels



Remaining Concerns

- Do not have the TAB/GAB power supply dimensions and power input/output needs
- Sufficient cooling for ADF crate?
 - Dan Edmunds has supplied power estimates
- Rearrange test stand
 - Large wooden crates will be removed shortly
 - Need to place racks close to the power outlets
 - Move desks and tables elsewhere
- Mock-up - should only be 1-2 days of dedicated effort
 - What is the best way to route cables?
 - Do not know how much slack is in the BLS trigger cables
- Transition system testing
 - Full time effort. Who will do this? Needs to be done immediately after patch panel and paddle cards prototypes arrive.
 - Drives schedule for full schedule production
 - Continuity tests for starters, then pulse generator and/or Calorimeter preamp pulser to check signal path up to ADF crate
 - Involve Dan Edmunds for advanced study of signal integrity, reflection, noise, etc.